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Correction of the power law of ac conductivity in ion-conducting materials due to the electrode polarization effect

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Abstract

Based on the supposition related to fractal nature of transport processes in ion-conducting materials, an expression for the low-frequency ac conductivity dependence was derived. This expression for the ac conductivity generalizes the power-law dependence and gives a possibility to take into account the influence of the electrode polarization effect. The ac conductivity expression obtained is in excellent agreement with experimental data for a wide frequency range. © 2014 American Physical Society.

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